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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/658,810

09/10/2003

Taro Terao

117127

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7590

04/19/2007

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ALEXANDRIA, VA 22320

EXAMINER

FEARER, MARK D

ART UNIT

PAPER NUMBER

2109

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/19/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

**Application No.**

10/658,810

**Applicant(s)**

TERAO, TARO

**Examiner**

Mark D. Fearer

**Art Unit**

2109

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on September 9, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>November 6, 2003</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement submitted on 06November2003 has been considered by the Examiner and made of record in the application file.

### ***Drawings***

The drawings are objected to because Figure 1, computer system 2 symbols lack descriptive labels.

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the processing, the operation, the holding, and the providing units must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering

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of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 10 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claim raises a question as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101.

Claim 10 claims the non-statutory subject matter of a program. Data structures not claimed as embodied in computer-readable media are descriptive material per se and are not statutory because they are not capable of causing functional change in the

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computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1754 (claim to a data structure per se held nonstatutory). Therefore, since the claimed programs are not tangibly embodied in a physical medium and encoded on a computer-readable medium then the Applicants has not complied with 35 U.S.C 101.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, and 6-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Seki et al. (US 20030005047 A1).

Consider claim 1. Seki et al. clearly shows and discloses an information processing system comprising: a server computer system ((“As shown in FIG. 6, the fingerprint cache 60 to be provided in the server side proxy 30”) paragraph 0081) which holds pieces of data as processing objects and characteristic values calculated on the basis of the pieces of data while associating the pieces of data with the characteristic values respectively ((“... using the fingerprint value 62 calculated from that data body 61 as its name.”) paragraph 0081), accepts a characteristic value as information requesting a piece of data as a processing object from a requester and selects the piece of data

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associated with the accepted characteristic value from the held pieces of data so as to provide the piece of data to the requester ((“The major methods for the request message that are used for accesses of information or services include a “GET method” that reads out an information on the server, a “PUT method” that writes data of the user into the server, and a “POST method” that receives a processing result in response to the request.”) paragraph 0011); and a client-side computer system which is communicatably connected to the server computer system ((“... client 50 inside the user's office 4 are capable of carrying out communications through the LAN 12, the WAN 14 and the LAN 16.”) paragraph 0065) and acquires pieces of data as processing objects from the server computer system ((“On the client 50 used by the user in order to utilize the service, a Web browser program or the like is operated according to the purpose. The user utilizes the service by sending a request message to a server that provides the desired service such as the information transfer or the order taking through the Internet from the Web browser and receiving a reply message, or repeating this procedure according to the need, for example.”) paragraph 0072).

Consider claims 2, 9, and 10. Seki et al. clearly shows and discloses a computer system ((“In this case, the computer will be provided with or connected with softwares such as OS, driver software, packet communication software and encryption software which have desired functions, and hardwares such as communication interface device, external memory device and input/output device.”) paragraph 71) comprising a holding unit for holding pieces of data as file name processing objects ((“In the case of the Web system, the browser or the like that is operating on the client often uses a cache

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mechanism for caching recently accessed data.”) paragraph 0006) and characteristic values calculated on the basis of the pieces of data while associating the pieces of data with the characteristic values respectively (“As shown in FIG. 6, the fingerprint cache 60 to be provided in the server side proxy 30 and the client side proxy 40 is recording and managing the data body 61 that were exchanged by using the HTTP protocol in the past, by using the fingerprint value 62 calculated from that data body 61 as its name.”) paragraph 0081); and a providing unit for accepting a characteristic value as information requesting a piece of data as a processing object from a requester and selecting the piece of data associated with the accepted characteristic value from the pieces of data held by the holding unit so as to provide the piece of data to the requester (“For the convenience of the explanation, the compression of the amount of transfer data by replacing the data body of a message with the fingerprint by utilizing the fingerprint cache at a time of the data transfer between the server side proxy 30 and the client side proxy 40 will be referred to as a fingerprint compression (FP compression) hereafter.”) paragraph 0085).

Consider claim 6, and as applied to claim 2 above. Seki et al. clearly shows and discloses a computer system wherein the holding unit (paragraph 0006) holds a characteristic value calculated on the basis of a characteristic value set containing at least one characteristic value (paragraph 0081); and the providing unit provides respective characteristic values contained in a characteristic value set to the requester when a characteristic value accepted as information requesting a piece of data as a processing object is associated with the characteristic value set (“When the reply data

of this reply message is judged as a target for applying the FP compression at the step S44, at the FP cache management unit 322, the contents dependent information value of the fingerprint of this reply data is calculated (step S45) and the fingerprint is obtained by attaching the own server side proxy identification information to that contents dependent information (step S46). Then, the fingerprint cache 34 corresponding to the request source client side proxy 40 is searched through by using this fingerprint value as a key (step S47).") paragraph 0217).

Consider claim 7, and as applied to claim 2 above. Seki et al. clearly shows and discloses a computer system wherein the holding unit holds information for specifying a characteristic value calculation method in association with the characteristic value ((“When the reply data of this reply message is judged as a target for applying the FP compression at the step S44, at the FP cache management unit 322, the contents dependent information value of the fingerprint of this reply data is calculated (step S45) and the fingerprint is obtained by attaching the own server side proxy identification information to that contents dependent information (step S46). Then, the fingerprint cache 34 corresponding to the request source client side proxy 40 is searched through by using this fingerprint value as a key (step S47).”) paragraph 0217.

Consider claim 8, and as applied to claim 2 above. Seki et al. clearly shows and discloses a computer system wherein the holding unit holds the characteristic value containing information concerning a predetermined calculation state at a point of time of calculation of the characteristic value ((“Also, up to this point, at a time of transferring the data from the server side proxy 30 to the client side proxy 40, if this data is the same



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as that registered in the fingerprint cache, the network traffic is reduced by transferring the corresponding fingerprint instead of this data. This FP compression can be applied also to the case of transferring the request data or the like from the client side proxy 40 to the server side proxy 30 as well.") paragraph 0159).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. (US 20030005047 A1) in view of Gordon (US 20030097320 A1).

Consider claim 3, and as applied to claim 2 above. Seki et al. clearly shows and discloses an operation unit for calculating a characteristic value on the basis of a piece of data as a processing object ("... at the FP cache management unit 322, the contents dependent information value of the fingerprint of this reply data is calculated (step S105)

and the fingerprint is obtained ...) paragraph 0185), holds the data fragments and the characteristic values in the cache holding unit while associating the data fragments with the addressable characteristic values as a fingerprint ((“The fingerprint value of this reply data is obtained (step S29), and this fingerprint value and this reply data are set in correspondence (the fingerprint value is set as a key) and registered into the fingerprint cache 44 at the FP cache management unit 422 (step S31).”) paragraph 0144), generates a sequence of characteristic values corresponding to the sequence of data fragments, calculates a characteristic value based on the sequence of characteristic values, and holds the sequence of characteristic values and the characteristic value calculated based on the sequence of characteristic values in the holding unit while associating the sequence of characteristic values with the characteristic value calculated based on the sequence of characteristic values ((“For example, when the data are to be transferred from the server side proxy 30 to the client side proxy 40 by using the HTTP protocol, the server side proxy 30 calculates the fingerprint of that data, and if the data corresponding to that fingerprint exists in the fingerprint cache corresponding to that client side proxy 40, it implies that (data with the same content as) this data had been transferred to that client side proxy 40 in the past, so that the server side proxy 30 transfers the corresponding fingerprint value without transferring that data itself. The client side proxy 40 that received the fingerprint can reproduce the data to be transferred by taking out the data corresponding to that fingerprint value from the fingerprint cache. In this scheme (i.e., the sequence of data compression.fwdarw.data transfer.fwdarw.data decompression), it is possible to reduce the amount of data to be

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transferred through the network considerably because it suffices to send the fingerprint values for those data that are the same as the data already sent in the past.") paragraph 0082). However, Seki et al. fails to teach of fragmenting the data. Gordon discloses a computer system wherein data is divided into a sequence of data fragments each having a predetermined size and calculates characteristic values based on the data fragments in accordance with the data fragments respectively ((“The input data units received by the IAES are processed by a set of specifically developed computer programs, which read the data units and divide the data records into fragments or blocks known to the IAES. The division of the data records by the routines is performed in accordance with predetermined parameters associated with the format and the content of the data record collection. The fragments and blocks have substantially identical dimensions. Each of the dimensionally substantially identical record fragment is assigned an arbitrarily predetermined complexity value by a set of specifically developed computer programs that calculate the complexity value of the fragments in association with predetermined processing parameters. The division of the related data records into multiple fragments having identical dimensions, the assignment of the complexity value to the fragments, and the subsequent organization of the data fragments, provides the option of creating data segmentation meaningful groups and detecting characteristic groups that provide conclusive information regarding the input information. The complexity value calculation requires no a-priori knowledge of the diverse input data received by the IAES.”) paragraph 0017)

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate fragmentation of data as taught by Gordon with holding fingerprints in cache as taught by Seki et al. for the purpose of efficient data transfer between a server and a client across a network.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. (US 20030005047 A1) as modified by Gordon (US 20030097320 A1) and in further view of Cheng et al. (US 20020105974 A1).

Consider claim 4, and as applied to claim 3 above. Seki et al., as modified by Gordon, clearly shows and discloses a computer system with a fingerprint management unit and a cache. This reads on "A computer system according to claim 3, wherein the operation unit calculates the characteristic value ..., the operation unit holds a result ... characteristic values in the holding unit. However, Seki et al., as modified by Gordon, fails to teach of an algorithm to sequentially fragment the data. Cheng et al. discloses a repetitive operation algorithm for calculation of sequential load values. This reads on "... the operation unit calculates the characteristic value based on the sequence of characteristic values by a repetitive operation for respective characteristic values contained in the sequence of characteristic values at the time of calculation of the characteristic value based on the sequence of characteristic values; and when the sequence of characteristic values comprises N characteristic values, the operation unit holds a result of the repetitive operation for one to N-1 characteristic values in the holding unit." ("The algorithm gives a reverse link load value that is a moving average of the reverse link load from a time frame that goes from the distant past up to the

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present. Each new calculation by the algorithm updates the most recently calculated reverse link load value by adding an increment load value to the previously obtained value and is dependent upon the number of frames in a window. The algorithm here disclosed does not ignore the previously calculated load value when computing the new load value. Actually, each new calculation by the algorithm builds on the previously calculated load value and modifies the previously obtained load value to include the most recently obtained load value. A window that includes a few frames will have less of an effect on the new load value than a window that has more frames. Abrupt changes in the value of the Rate Limit value which will occur if the window contains two frames can be avoided by including more frames, for example 20 or 50 frames, in the window. In the explanation of the operation of this invention, and for illustrative purposes only, the window is comprised of fifty frames  $N, N-1, \dots, N-49$  where frame  $N$  is the current frame and frames  $N-1, N-2 \dots N-49$  are the forty-nine frames which immediately precede the current frame  $N$ . Referring to FIG. 2, frame 60 is the current frame, and frames 62, 64, . . . 68 are preceding frames where frames 60-68 comprise the fifty frames of window 70. Now, for illustrative purposes, utilization of the algorithm is as follows: assume that there are five mobiles transmitting on the reverse link where mobiles 1 through 5 are transmitting at 9.6 kbps; 153.6 kbps, 9.6 kbps, 9.6 kbps and 76.8 kbps, respectively.") paragraph 0028).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate an algorithm for defining a window of frames as taught by Cheng et al. with cached fingerprints as taught by Seki et al., as

modified by Gordon, for the purpose of sequentially defining and redefining a data packet of data.

. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Seki et al. (US 20030005047 A1) in view of Cheng et al. (US 20020105974 A1).

Consider claim 5, and as applied to claim 2 above. Seki et al. clearly shows and discloses a computer system a computer system comprising an operation unit for calculating a characteristic value on the basis of a piece of data as a processing object, wherein the operation unit divides the piece of data as a processing object into a sequence of data fragments each having a predetermined size, calculates characteristic values based on the data fragments in accordance with the data fragments respectively (paragraph 0185), and compares the size of each calculated characteristic value with the predetermined size, holds the data fragment per se in the holding unit when the predetermined size is smaller than the size of the calculated characteristic value but holds the data fragment and the characteristic value associatively in the holding unit when the predetermined size is larger than the size of the calculated characteristic value ((“For example, when the data are to be transferred from the server side proxy 30 to the client side proxy 40 by using the HTTP protocol, the server side proxy 30 calculates the contents dependent information of the fingerprint of that data, and if the data corresponding to that fingerprint formed by the own server side proxy identification information and that contents dependent information exists in the fingerprint cache, it implies that (data with the same content as) this data had been transferred to that client side proxy 40 in the past, so that the server side proxy 30 transfers the corresponding

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fingerprint value without transferring that data itself. The client side proxy 40 that received the fingerprint can reproduce the data to be transferred by taking out the data corresponding to that fingerprint value from the fingerprint cache. In this scheme (i.e., the sequence of data compression.fwdarw.data transfer.fwdarw.data decompression), it is possible to reduce the amount of data to be transferred through the network considerably because it suffices to send the fingerprint values for those data that are the same as the data already sent in the past.”) paragraph 0175). However, Seki et al. fails to teach of sequentially generating data fragments that correspond with characteristic values. Cheng et al. discloses a repetitive operation algorithm for calculating sequential load values. This reads on “... generates a characteristic value-containing sequence corresponding to the sequence of data fragments, calculates a characteristic value based on the characteristic value-containing sequence, and holds the characteristic value-containing sequence and the characteristic value calculated based on the characteristic value-containing sequence in the holding unit while associating the characteristic value-containing sequence with the characteristic value calculated based on the characteristic value-containing sequence.” (paragraph 0028).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate an algorithm for defining a window of frames as taught by Cheng et al. with a method of comparing calculated values against predetermined sizes as taught by Seki et al. for the purpose of faster, non-repetitive network transfer of data.

**Conclusion**

Any response to this Office Action should be faxed to (571) 273-8300 or mailed to:

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Mark Fearer whose telephone number is (571) 270-1770. The Examiner can normally be reached on Monday-Thursday from 7:30am to 5:00pm.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Rafael Pérez-Gutiérrez can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

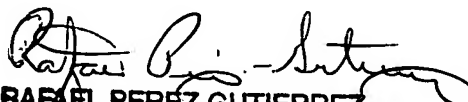


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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.

Mark Fearer  
M.D.F./mdf  
April 16, 2007

  
RAFAEL PEREZ-GUTIERREZ  
SUPERVISORY PATENT EXAMINER  
4/16/07